

Alaska Telemedicine Testbed Project

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PROJECT DESCRIPTION

The Alaska Telemedicine Testbed Project demonstrates and evaluates the use of narrow-bandwidth telemedicine for otolaryngology (ENT) in 26 remote villages in western Alaska, four regional Native Alaska hospitals, and the Alaska Native Medical Center in Anchorage. Using Alaska's satellite-based, public switched network, with data rate throughputs ranging from 900 to 1,900 baud, telemedicine workstations for ENT, secure clinical software, clinical protocols, and training materials were developed for use in village clinics by Alaska community health aides.

Telemedicine for ENT was chosen as the focus of this study for two reasons: (1) the high rates of otitis media in frontier Alaska and (2) the fact that ENT had no bias for gender or age among the five clinics that comprised 99.8 percent of patients transported in 1996 to Anchorage for health care. A patient and provider satisfaction study was designed to measure whether "telemedicine" for ENT was considered by patients and providers to be "as good or better" than current clinical practices, which were based on moving patients from villages to regional medical centers and from regional medical centers to Anchorage. A cost-benefit study was designed to establish both the cost per transaction and benefits of telemedicine applications and technologies for frontier health systems and Native Health Corporations.

With more than 1,600 encounters for ENT, analysis of current data suggests that the use of telemedicine for ENT is perceived as being "as good or better" than the current transportation-based model of ENT services in western Alaska. In addition, community health aides used deployed equipment for dermatology and emergency

medicine. More than 4,400 clinical encounters have been logged for dermatology and emergency medicine.

LESSONS LEARNED

Preliminary analysis suggests that narrow-bandwidth, store-forward telemedicine applications and technologies for ENT in western Alaska can be very effective and that costs for deployment of equipment and training and support are justified compared with the costs of the current transportation-based model for ENT services. In addition, both patients and providers perceived the benefits of telemedicine, despite the fact that patients enjoyed traveling for health care services, especially traveling to Anchorage. Frontier patients, community health aides, doctors, nurses, nurse practitioners, and physician assistants working in regional hospitals have come to believe that "telemedicine is a tool," and many expressed the opinion that they cannot understand how they were able to deliver effective health care "before telemedicine."

Participating partners believe that valuable lessons have been learned through this project. Participating partners believe that "basic" telecommunications and information technologies can be used to successfully deploy and implement "sustainable" telemedicine and telehealth systems. Participating partners believe that "telemedicine" must be accepted as a "tool" for improving the delivery of health care to frontier patients. Partners demonstrated that well-chosen, robust equipment, scaled for the end-user, with the proper training and support, could be deployed and successfully used in the most remote villages in western Alaska. Partners believe that, perceived as an effective tool, store-forward telemedicine for ENT and dermatology—as well as for trauma—can deliver health care in areas

where geography, climate, distance, and population density do not currently allow for “advanced” telecommunications services. Finally, participating partners believe that appropriate telemedicine applications and technologies, scaled to the existing telecommunication infrastructure, with appropriate training and support, can improve the delivery of health care to remote populations and can be sustained after initial funding.

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